

Application No.: 09/519,563
Amendment Dated: November 4, 2003
Reply to Office Action of: September 4, 2003

In the Claims:

The current claim set of the application is presented below. Indications as to the status of the claims ("original", "currently amended", "cancelled", "new", etc.) appear in parentheses after the claim number. Deletions are identified in bold with double brackets and strikethrough (e.g. ~~deletion~~) and new text is identified in bold with underlining (e.g. new language).

Please amend claims 1, 2, 10, and 27, cancel claims 14-26, and add claim 28 as follows:

1. (Currently amended) An implantable beneficial agent infusion device, comprising:
an hermetically sealed enclosure;
a fluid reservoir positioned at least partially within the hermetic enclosure, the fluid reservoir being adapted to contain a fluid containing a beneficial agent therewithin;
~~means-a catheter~~ for delivering the fluid into a patient's body;
a controllable pump, the pump communicating with the reservoir and the catheter
~~means-for delivering the fluid into a patient's body~~ and causing the fluid to move from the reservoir into the ~~catheter~~~~means-for delivering a fluid into a patient's body~~ upon receiving a command actuating same; ~~and~~
a valve assembly comprising a deflectable energy storing member, ~~means for;~~ and
an electrical circuit configured to controllably energizing and deflecting the energy storing member by providing an output voltage and electric charge thereacross or therein, ~~and-means for~~ configured to recovering at least a portion of the electric charge from the deflectable energy storing member when the output voltage provided thereto is switched off.
2. (Currently amended) The implantable medical device of claim 1, wherein the electrical circuit is operably energizing and deflecting means is electrical coupled to upper and lower surfaces of the deflectable energy storing member.
3. (Original) The implantable medical device of claim 1, wherein the energy storing member is deflectable or moveable between a first non-energized position in which

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movement of the fluid from the reservoir into the means for delivering the fluid into the patient's body is blocked, and a second energized position in which the movement of the fluid from the reservoir into the means for delivering the fluid into the patient's body is permitted.

4. (Original) The implantable medical device claim 1, wherein the energy storing member pushes or pulls a seal between a first sealed position in which movement of the fluid from the reservoir into the means for delivering the fluid into the patient's body is blocked, and a second unsealed position in which the movement of the fluid from the reservoir into the means for delivering the fluid into the patient's body is permitted, when the member is de-actuated and actuated, respectively.
5. (Original) The implantable medical device of claim 1, wherein the deflectable energy storing member comprises a piezo-electric material.
6. (Original) The implantable medical device of claim 1, wherein the deflectable energy storing member comprises a electro capacitive material.
7. (Original) The implantable medical device of claim 1, wherein the deflectable energy storing member comprises a electro-static material.
8. (Original) The implantable medical device of claim 1, wherein the deflectable energy storing member comprises a solenoid.
9. (Original) The implantable medical device of claim 1, wherein the fluid reservoir further comprises means for maintaining the fluid containing a beneficial agent between a first pressure and second pressure.
10. (Currently amended) The implantable medical device of claim 1, wherein and the circuit comprises an integrated circuit comprising a driving circuit that receives

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electrical current from a power source and transforms the current into an output signal appropriate to cause the energy storing member to deflect in response to the application of an electrical field thereto such that a sealing means moves into an open position to permit fluid to flow from the fluid reservoir.

11. (Original) The implantable medical device of claim 10, wherein the output signal ranges between about +80 Volts and about +150 Volts.
12. (Currently amended) The implantable medical device of claim 1, wherein the means for controllably energizing and deflecting the deflectable energy storing member and the means for recovering electric charge from the energy storing member are coupled to a suitable power source.
13. (Original) The implantable medical device of claim 12, wherein the power source is selected from the group consisting of an electrochemical cell, a battery, a plurality of electrochemical cells, a storage capacitor, a super-capacitor and a electrolytic capacitor.
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26. (Currently cancelled)
27. (Currently amended) A method of infusing a beneficial agent or drug into a patient with an implantable beneficial agent infusion device, the device comprising an hermetically sealed means for enclosing, means for containing the fluid positioned at least partially within the enclosing means, means for delivering the fluid into the patient's body, controllable means for pumping, the pumping means communicating with the fluid containing means and the means for delivering the fluid into a patient's body and causing the fluid to move from the fluid containing means into the means for delivering a fluid into the patient's body upon receiving a command actuating the pumping means, and a valve assembly comprising deflectable means for storing electric energy and means for controllably energizing and deflecting and deflectable energy storing means by providing an output voltage and electric charge thereacross or therein, the valve assembly further comprising means for recovering the electric charge from the deflectable means for storing electric energy, the method comprising;
- (a) energizing the a deflectable energy storing means member with at least one of electric charge and electric voltage and causing same to deflect from an un-energized position to an energized position;
 - (b) causing at least a portion of the fluid contained in the fluid containing means to flow through a path blocked by the deflectable energy storing member in the un-energized position into the means for delivering the fluid into the patient's body in response to the energy storing means member deflecting;
 - (c) de-energizing the deflectable energy storing means member and causing same to move to the un-energized position, and
 - (d) recovering at least a portion of the electric charge from the deflectable energy storing means member when the deflectable energy storing means member returns to its un-energized position.

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28. (New) The method of claim 27, wherein recovering at least a portion of the electric charge from the deflectable energy storing member comprises discharging a voltage through an inductor.

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